Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of the Commission's	)	
Rules Concerning Maritime	)	PR Docket No. 92-257
Communications	)	RM-7956, 8031, 8352
	)	

JOINT COMMENTS OF THE NATIONAL ASSOCIATION OF BROADCASTERS AND THE ASSOCIATION FOR MAXIMUM SERVICE TELEVISION ON THE SECOND FURTHER NOTICE OF PROPOSED RULE MAKING

In its Second Further Notice of Proposed Rule Making (FCC 97-217, released June 26, 1997) ("Notice"), the Commission proposes changes to the regulations governing automated maritime telecommunications system ("AMTS") stations. Because AMTS stations are allocated spectrum in the 217-220 MHz band adjacent to television channel 13, the proposed regulatory changes could potentially result in interference to broadcast television service. Accordingly, the Commission solicited comment on its proposals from the broadcasting community.

The comments that follow are submitted by the National Association of Broadcasters ("NAB")[1] and the Association for Maximum Service Television ("MSTV").[2] In sum, while we have no objection to the proposal to allow point-to-point AMTS facilities to operate with one watt of effective radiated power (subject to certain conditions, as explained below), we oppose the proposal to relax the regulatory scheme governing AMTS licensees that seek to construct

[1] NAB is a nonprofit, incorporated association of television and radio stations and networks which serves and represents the American broadcast industry.

[2] MSTV is a non-profit association of television station owners dedicated to preserving the technical integrity of the television broadcast service.

additional base stations.

I. BACKGROUND

An automated maritime telecommunications system is a specialized system of public coast stations providing integrated and interconnected marine voice and data communications, somewhat like a cellular telephone system. The purpose of AMTS systems is to enable tugboats, barges and other commercial vessels on the nation's waterways to communicate with each other and to connect to other telecommunications systems, such as the public switched telephone network. Part 80 of the Commission's rules contains the regulations that apply to the operation of AMTS stations in the 217-220 MHz band, just above television channel 13. See 47 CFR Part 80. Part 95 of the Commission's rules contains regulations that apply to the operation of low power point-to-point network control links for AMTS systems in the 216.75-217.00 MHz band. See 47 CFR Part 95.

Because AMTS stations operate adjacent to television channel 13 and therefore have the potential to interfere with Channel 13 reception, and because AMTS stations can interfere with television Channel 10 reception due to a phenomenon called "half-IF beat interference,"[3] the Commission places several requirements on applicants for AMTS licenses -- requirements that are aimed at preventing interference to television Channels 10 and 13. Specifically, an applicant for an AMTS license who proposes to locate a base station transmitter within 169 kilometers (105 miles) of a Channel 13 television station, or within 129 kilometers (80 miles) of a Channel 10

[3] The "half-IF beat effect" can occur to television Channel 10 reception when the difference between the second harmonic of a television receiver's local oscillator frequency and the second harmonic of an AMTS interfering frequency is at or near the television receiver's intermediate frequency (IF).

television station, must submit an engineering study to the Commission showing the means by which it plans to avoid harmful interference to television reception. See 47 CFR § 80.215(h). In addition, the applicant is required to notify each television station that may be affected, in order to provide that broadcaster with an opportunity to comment on the proposed construction. These requirements also apply to any AMTS applicant proposing to install an antenna at a height greater than 61 meters (200 feet).

II. DISCUSSION

A. Siting Flexibility.

In the Notice, the Commission suggests that AMTS licensees might benefit from a more flexible authorization procedure. Specifically, the Commission proposes to allow licensees to construct additional base stations within the geographic areas that they serve, with a minimal amount of prior review by the Commission and other interested parties. Notice ¶ 115. The Commission notes that any regulatory change should not result in harmful interference to television reception, and accordingly requests input regarding the impact of any such changes on the public's ability to receive interference-free over-the-air television service. Id. ¶ 115.

NAB and MSTV believe the rules requiring AMTS applicants to perform engineering studies and to notify television broadcasters on Channels 10 and 13 of proposed construction near their coverage areas are necessary to protect broadcasters from harmful interference. While we generally favor the relaxation of unnecessary regulatory burdens, regulatory requirements such as those currently imposed on AMTS applicants are absolutely essential in order to protect existing over-the-air television service. The possibility of interference to Channels 10 and 13 is well

established, and there have been no changes in the technology involved that would justify relaxing the protection criteria.

To begin with, it is well established that television receivers are susceptible to interference from AMTS transmitters. In a Technical Memorandum published in 1982, the Commission concluded that "an Inland Waterways Communications Service in the frequency band 216 to 220 MHz is feasible without reducing the service areas of television stations, given certain IWCS operating constraints, particularly in the vicinities of television Channels 13 and 10. These constraints include engineering studies showing how protection is to be provided to television reception."[4] This document provided test data demonstrating that television receivers were susceptible to interference from AMTS transmitters. Indeed, the data showed interference in TV receivers of a variety of designs, and indicated little change in TV receiver ability to reject AMTS interference, between the 1972 and 1979 model years. Nor is there evidence to suggest that the filtering circuitry in TV receivers has improved enough over the past 18 years (i.e., since 1979) to warrant relaxation of the Commission rules designed to protect TV receivers from harmful AMTS interference.

Though some commenters may claim that a low number of interference complaints is evidence that AMTS operations are not interfering with television broadcast signals, we find the low number of complaints inconclusive. As a 1988 study conducted for NAB by B. Angell & Associates indicates, most people who experience interference in their broadcast receivers respond by changing the channels or turning the receiver off.[5] This phenomenon is readily

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[4] OST Technical Memorandum FCC/OST TM82-4 at 8 (June 1982).

[5] National Association of Broadcasters, *AM Radio Interference Study Final Report* at 26-28 (June 1988). Although this study was conducted to determine the impact of interference to AM radio reception, it is reasonable to conclude that FM radio listeners and television viewers will behave in a substantially similar manner when

apparent to anyone who has ever tried to receive a broadcast signal in, for example, an office building containing light dimmers, computer equipment and other electronic devices. Despite the high levels of electrical noise in the broadcast bands in many buildings, consumers rarely call the broadcaster or the Commission to complain about interference. Rather, they turn the receiver off or tune it to one of the few local signals able to make it through all of the interference. Thus, it is unwise to conclude, simply on the basis of viewer silence, that AMTS operations are not causing destructive interference to television broadcast signals on Channels 10 and 13.

Nor is the possibility of more selective receiving equipment a realistic solution to the interference problem. While some higher priced receivers have better adjacent channel interference rejection capability than the receivers examined in the 1982 study, many lower priced receivers are still susceptible to adjacent channel interfering signals. The continuing susceptibility of NTSC television receivers to adjacent channel interference is confirmed by several recent engineering studies produced during the digital television ("DTV") development process.[6]

The Notice requests comment on whether the regulations governing AMTS siting should be different for sites near DTV Channel 10 and 13 transmissions. Notice ¶ 115. There is insufficient evidence at this time for any conclusions to be drawn regarding the impact that AMTS transmitters will have on DTV transmissions. It is generally true that, all other things being equal, a DTV signal will be less susceptible to adjacent channel interference than today's analog television signals, as the DTV signal contains sophisticated error correction coding that enables it to remain unaffected by some of the interfering signals that impact analog signals. However, all

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confronted with objectionable interference.

[6] See Carl G. Eilers, The Development of a High Definition Television (HDTV) Terrestrial Broadcasting Emission Mask, IEEE Transactions on Broadcasting, Vol. 41, No. 4, at 121 (December, 1995); see also Advanced Television Test Center, An Evaluation of the FCC Proposed RF Mask for the Protection of Adjacent Channel NTSC Signals

other things will not be equal when DTV is implemented. For instance, the transmitted power of a Channel 10 or a Channel 13 DTV signal will be substantially lower than the transmitted power of a Channel 10 or a Channel 13 NTSC signal, thereby offsetting some of the advantage that the DTV signal would have over an NTSC signal with regard to rejecting interference from AMTS transmitters. Thus, the Commission should wait until mass production of DTV receivers has begun and the ability of these receivers to reject adjacent channel interference has been fully assessed, before making any decisions regarding the amount of protection that DTV signals need from AMTS facilities.

In order to ensure that new AMTS operations do not cause unacceptable levels of interference to Channel 10 and Channel 13 viewers, the Commission must continue to require that AMTS licensees seeking to construct additional stations within their service areas submit engineering studies showing how they will avoid harmful interference to television reception.[7] The Commission must maintain this requirement for all applicants proposing to locate transmitters within 169 kilometers (105 miles) of a Channel 13 station, within 129 kilometers (80 miles) of a Channel 10 station or at any location with an antenna height greater than 61 meters (200 feet). Additionally the Commission must continue to require AMTS licensees constructing such facilities to notify affected broadcasters in advance, giving these broadcasters the opportunity to comment on the proposal. There have been no changes in the governing technology since the Commission first implemented these protection criteria to warrant their relaxation.

(October 22, 1996).

[7] Further, it is quite clearly inappropriate to relieve AMTS licensees of their responsibility to correct any interference to television reception that is caused by their transmitters. We do not understand the Commission to have proposed any such change.

B. Technical Flexibility

Currently, AMTS licensees who operate point-to-point network connections in accordance with the Low Power Radio Service (LPRS) requirements in Part 95 of the Commission's rules must limit their effective radiated power to 100 mW. See 47 CFR § 95.1013(a). In the Notice, the Commission proposes that these point-to-point network connections be permitted to operate at higher power levels, provided they do not cause interference to television reception, U.S. government systems and other LPRS systems. Notice ¶ 122.

NAB and MSTV recognize that 100 mW of effective radiated power is a very low signal level that limits the distance over which point-to-point AMTS network control communications may be transmitted in the 216.75-217.00 MHz band. Accordingly, we do not oppose allowing these point-to-point facilities to operate with one watt of effective radiated power, *provided that:* **(1)** any emissions at or below 216 MHz are attenuated by at least $43 + 10\log_{10}$ (mean power in watts) dB;[8] **(2)** the requirements for these point-to-point links are moved from Part 95 of the Commission's rules to Part 80; and **(3)** these links are subject to the same engineering study and television station notification requirements -- and interference resolution requirements -- that apply to other AMTS transmitters, as described in 47 CFR § 80.215(h).

The Commission also proposes to eliminate the modulation and channelization requirements for AMTS base stations as long as their transmissions do not exceed the adjacent channel emission limitations of each station's authorization. Notice ¶ 119. If adopted, this

[8] This is the same attenuation requirement that applies to existing Part 80 AMTS transmitters. See 47 CFR § 80.211.

proposal could generally increase the level of energy emitted in the AMTS band. This would, in turn, generally increase the out-of-band AMTS emissions that impact television Channels 10 and 13. This is yet another reason to maintain the engineering study and television station notification requirements that currently apply to AMTS applications near Channel 10 and Channel 13 television transmitters.

II. CONCLUSION

Despite the increasing popularity of AMTS telecommunications services, it remains of utmost importance to protect the public's free over-the-air television service from interfering signals. Designed primarily to serve an informational function and to forestall possible interference problems, the current regulatory procedures cause minimal burden to AMTS applicants. As there have been no changes in the relevant technology that would warrant relaxation of these information-providing procedures, we request that the regulatory scheme

not be changed. We do not, of course, seek to prevent AMTS services that post no actual threat to television reception and accordingly we agree that point-to-point facilities should be permitted to operate at greater powers (subject to the conditions set out above).

Respectfully submitted,

NATIONAL ASSOCIATION OF BROADCASTERS

Henry L. Baumann
Barry D. Umansky
1771 N Street, N.W.
Washington, D.C. 20036-2891
Phone: (202) 429-5430
Fax: (202) 775-3526

Kelly T. Williams
Director of Engineering

Dave Wilson
Manager, Technical Regulatory Affairs
NAB Science & Technology

ASSOCIATION FOR MAXIMUM SERVICE TELEVISION, INC.

Victor Tawil
Senior Vice President
Association for Maximum Service Television, Inc.
1776 Massachusetts Avenue, N.W.
Suite 310
Washington, D.C. 20036

Phone: (202) 861-0344
Fax: (202) 861-0342

Jonathan D. Blake
Ellen P. Goodman
Erika F. King
Covington & Burling
1201 Pennsylvania Avenue, N.W.
Post Office Box 7566
Washington, D.C. 20044

Phone: (202) 662-6000
Fax: (202) 662-6291

Its Attorneys